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FACTS AND FIGURES TO SUPPORT GOVERNOR O'MALLEY'S OFFSHORE WIND DEVELOPMENT ANNOUNCEMENT

*Data from the National Renewable Energy Laboratory of the
US Department of Energy supports Governor's claims*

BALTIMORE, MD (October 7, 2010) – Governor O'Malley [today announced](#) that a proposed one gigawatt wind farm in the waters off of the Delmarva coast could generate as many as 4,000 manufacturing and construction jobs during the five year development period, with an additional 800 permanent jobs once the turbines are spinning. This projection, calculated by the Maryland Energy Administration, is based on a recent report by the National Renewable Energy Laboratory (NREL) of the United States Department of Energy (DOE),¹ which estimates that offshore wind will create approximately 20.7 direct jobs per annual megawatt.

In addition to the NREL report, the Maryland Energy Administration made use of the following publicly available statistics to inform its calculations:

- In the US, approximately 85,000 people are employed in the wind industry today and work in areas as varied as turbine component manufacturing, construction and installation of wind turbines, wind turbine operations and maintenance, legal and marketing services, and transportation and logistical services.²
- In 2008 alone, the U.S. wind industry installed over 5,000 turbines. To install that number of turbines, the U.S. industry required 15,000 blades and the same number of tower sections, approximately 2.4 million bolts, 27,000 miles of rebar, 1.2 million cubic yards of concrete (enough for more than 5,700 miles of 4-foot wide sidewalk) and at least 1 million tons of steel. There are over 8,000 components in each turbine assembly.³
- Metal components make up nearly 90% of the weight and over one-third of the value of a modern wind turbine.⁴
- The industry saw an investment in wind turbine equipment in the U.S. of over \$8.5 billion in 2008 -- which translates into a \$3 billion industry for steel or cast iron components -- and the annual demand is projected to double during the next few decades as the industry ramps up to produce a larger share of the nation's electricity.⁵
- As offshore wind expands, the industry will need to find skilled workers in the following positions:⁶
 - Manufacturers
 - Highly qualified chemical, electrical, mechanical and materials engineers dealing with R&D issues, product design, management and quality control of production process. Semi-skilled and non skilled workers for production chains. Health and safety experts. Technical staff for O&M and repairing wind turbines. Other support staff (admin., sales managers, marketing, accounting, others).

¹ "Large-Scale Offshore Wind Power in the United States ASSESSMENT OF OPPORTUNITIES AND BARRIERS" September 2010, NREL/TP-500-40745, Walter Musial, NREL, Bonnie Ram, Energetics <http://www.nrel.gov/docs/fy10osti/40745.pdf>, citing EWEA data from EWEA (European Wind Energy Association). (January 2009). *Wind at Work: Wind Energy and Job Creation in the EU*. http://www.ewea.org/fileadmin/ewea_documents/documents/publications/Wind_at_work_FINAL.pdf. Accessed August 28, 2010.

² AWEA 2009 Market Update, http://www.awea.org/pubs/factsheets/Market_Update_Factsheet.pdf

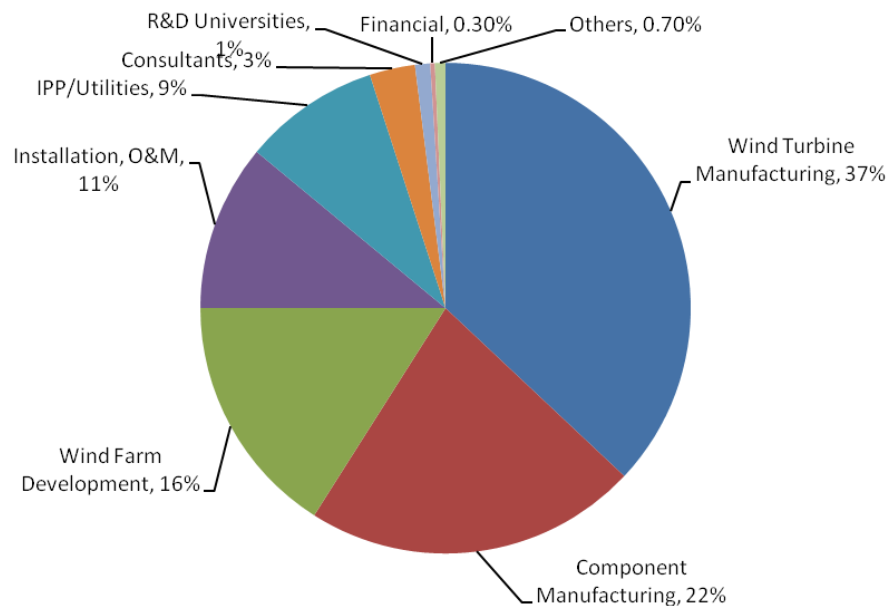
³ AWEA Wind Power Value Chain: Building Links to a Cleaner Energy Future, http://www.awea.org/pubs/factsheets/value_chain.pdf

⁴ Supply Chain - the Race to Meet Demand (European Wind Energy Association, Jan-Feb 2007). Value includes towers but does not include gearboxes and electrical components

⁵ AWEA Wind Power Value Chain, Metal Working for the Wind Industry, http://www.awea.org/pubs/factsheets/metal_working.pdf

⁶ EWEA 2009

- Developers
 - Project managers (engineers, economists) to co-ordinate the process. Environmental engineers and other specialists to analyze the environmental impacts of the wind farms. Programmers and meteorologists for wind energy forecasts and prediction models. Lawyers and economists to deal with the legal and financial aspects of project development. Other support staff (admin., sales managers, marketing, accounting, others).
 - Construction, repair and O&M
 - Technical staff for O&M and repairing the wind turbines. Electrical and civil engineers to co-ordinate the building work. Health and safety experts. Specialists in the transport of heavy goods. Electricians. Technical staff specialized in wind turbine installation, including activities in cranes, fitters, nacelles, etc. Semi-skilled and non-skilled workers for the building process. Other support staff (admin., sales managers, accounting, others).
 - Independent power producers, utilities
 - Electrical, environmental and civil engineers for the management of the plants. Technical staff for the O&M of the plants, if this task is not subcontracted. Health and safety experts. Financiers, salespersons, marketing people in order to sell the electricity. Other support staff (admin., accounting, others).
 - Consultancies, legal entities, engineering, financial institutions, insurers, R&D centers, others.
 - Programmers and meteorologists for analyzing wind regimes and output forecasts. Engineers specialized in aerodynamics, computational fluid dynamics and other R&D areas. Environmental engineers. Energy policy experts. Experts in social surveys, training and communication. Financiers and economists. Lawyers specialized in energy and environmental matters. Marketing staff, event organizers.
- Overall wind power employment breaks down into the following sectors: ⁷



For more information, [visit the Maryland Energy Administration.](#)

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